

L4 ANSWER 1 OF 20 CAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 2005:1265326 CAPLUS
 DOCUMENT NUMBER: 144:24241
 TITLE: Process for the distillative separation of aqueous amine solutions
 INVENTOR(S): Staffens, Friedhelm; Buse, Rainer; Brady, Bill
 PATENT ASSIGNEE(S): Bayer Materials Science AG, Germany
 SOURCE: U.S. Pat. Appl. Publ., 7 pp.
 CODEN: USXXCO
 DOCUMENT TYPE: Patent
 LANGUAGE: English
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 2005263385	A1	20051201	US 2005-138991	20050526
DE 102004026626	A1	20051229	DE 2004-102004026626	20040601
EP 1602640	A1	20051207	EP 2005-10842	20050519
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, HU, PL, SK, BA, HR, IS, YU				
JP 2005343898	A2	20051215	JP 2005-161772	20050601
DE 2004-102004026626A 20040601				

PRIORITY APPLN. INFO.:
 AB The invention relates to an energy efficient process for the distillative working-up of aqueous amine solns. that occur in the catalytic hydrogenation of nitroarom. compds. In this process, the amine is freed from water and also the water is obtained free from amine and low-boiling compds. and the concentrated low-boiling compds. are obtained.

L4 ANSWER 2 OF 20 CAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 2003:49012 CAPLUS
 DOCUMENT NUMBER: 138:385095
 TITLE: Palladium complex of poly(4-vinylpyridine-co-acrylic acid) for homogeneous hydrogenation of aromatic nitro compounds
 AUTHOR(S): Xi, Xiangli; Liu, Yingliang; Shi, Jun; Cao, Shaokui
 CORPORATE SOURCE: Department of Materials Engineering, Zhengzhou University, Zhengzhou, 450052, Peop. Rep. China
 SOURCE: Journal of Molecular Catalysis A: Chemical (2003), 192(1-2), 1-7
 CODEN: JMCCF2; ISSN: 1381-1169
 PUBLISHER: Elsevier Science B.V.
 DOCUMENT TYPE: Journal
 LANGUAGE: English
 OTHER SOURCE(S): CASREACT 138:385095
 AB Copolymers, poly(4-vinylpyridine-co-acrylic acid) (PVPA), with different composition were synthesized, and their palladium complexes were prepared
 The catalytic properties of the palladium complex for the hydrogenation of aromatic nitro compds. were investigated. The palladium complex of PVPA can form a homogeneous system in ethanol. The optimum catalytic activity for hydrogenation of nitrobenzene was obtained when the molar content of 4-vinylpyridine (VPy) units in PVPA was 57.5% and VPy/Pd molar ratio was 6. The presence of 0.1 mol/L KOH can promote the catalytic activity to a great extent. In most cases, the hydrogenation of aromatic nitro compds. yields the corresponding aniline compds. almost quant. The catalyst shows especially good activity for the hydrogenation of nitrophenols and nitroanisoles. The catalytic stability was also examined

REFERENCE COUNT: 12 THERE ARE 12 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L4 ANSWER 3 OF 20 CAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 1999:808693 CAPLUS
 DOCUMENT NUMBER: 132:37259
 TITLE: Improved process for hydrogenation of dinitrotoluene to toluenediamine by monolith catalyst containing nickel and palladium
 INVENTOR(S): Machado, Reinaldo Mario; Parrillo, David Joseph; Boehme, Richard Peter; Broekhuis, Robert Roger
 PATENT ASSIGNEE(S): Air Products and Chemicals, Inc., USA
 SOURCE: U.S., 10 pp.
 CODEN: USXXAM
 DOCUMENT TYPE: Patent
 LANGUAGE: English
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 6005143	A	19991221	US 1998-130936	19980807
KR 2000017021	A	20000325	KR 1999-31780	19990803
EP 978505	A2	20000209	EP 1999-115409	19990804
EP 978505	A3	20001102		
EP 978505	B1	20030416		
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO				
BR 9903380	A	20001017	BR 1999-3380	19990804
CN 1245163	A	20000223	CN 1999-117513	19990806
JP 2000080061	A2	20000321	JP 1999-223566	19990806
US 1998-130936 A 19980807				

PRIORITY APPLN. INFO.:
 AB This invention relates to an improvement in a process for hydrogenating a nitroarom. composition namely dinitrotoluene by contacting the dinitrotoluene with hydrogen in a reactor employing a monolith catalyst system. Broadly the improvement resides in the continuous, essentially solventless, adiabatic hydrogenation of dinitrotoluene to toluenediamine in a plug flow reactor system incorporating the monolith catalyst. The process generally comprises the steps: introducing a feedstock comprised of dinitrotoluene and reaction product components continuously into the reactor and said feedstock having <30 weight% of a solvent, carrying out the hydrogenation of dinitrotoluene to toluenediamine under adiabatic conditions; and, continuously removing hydrogenated reaction product from the reactor. The concentration of dinitrotoluene in the feedstock to the reactor inlet ranges from 0.2 to 3 weight%. The inlet temperature to the reactor is from 100° to 140°. The monolith catalyst has the catalytic metals nickel and palladium incorporated. Thus, hydrogenation of dinitrotoluene to toluenediamine by the above procedure in a cylindrical monolith reactor (approx. 5 m high and 0.5 m in diameter with a com. 400 CPI cordierite monolith supporting square shaped cells with 10% alumina washcoat and a catalyst metal loading of 10% nickel and 1% palladium based on the washcoat) at inlet feed rate 2.00 mol/m³/s, temperature 110°, inlet dinitrotoluene concentration 142 mol/m³, total pressure 1600 kPa, residence time 71 s, catalyst activity 0.3/s, and exit temperature 159 gave exit dinitrotoluene concentration 2 ppm, dinitrotoluene conversion 100%, final dinitrotoluene yield to toluenediamine 97.4%, and byproduct 2.6 weight%, compared to 0, 100%, 93.7%, and 16.3 weight%, resp., for the same process using inlet dinitrotoluene concentration 237 mol/m³, residence time 119 s, and exit temperature

L4 ANSWER 3 OF 20 CAPLUS COPYRIGHT 2006 ACS on STN (Continued)

180° instead.
 REFERENCE COUNT: 8 THERE ARE 8 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L4 ANSWER 4 OF 20 CAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 1998:208515 CAPLUS
 DOCUMENT NUMBER: 128:257227
 TITLE: Hydrogenation process for the preparation of substituted aromatic amino compounds
 INVENTOR(S): Baumeister, Peter; Siegrist, Urs; Studer, Martin
 PATENT ASSIGNEE(S): Novartis A.-G., (Switz.); Baumeister, Peter; Siegrist, Urs; Studer, Martin
 SOURCE: PCT Int. Appl., 35 pp.
 CODEN: PIXXD2
 DOCUMENT TYPE: Patent
 LANGUAGE: English
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 9813331	A1	19980402	WO 1997-EP5151	19970919
W: AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GR, GU, ID, IL, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, US, UZ, VN, YU, ZW				
KW: GH, KE, LS, MW, SD, SZ, UG, ZW, AT, BE, CH, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, ML, MR, NE, SN, TD, TG				
CA 2265527	AA	19980402	CA 1997-2265527	19970919
CA 2265527	C	20060207		
AU 9745557	A1	19980417	AU 1997-45557	19970919
EP 931053	A1	19990728	EP 1997-943873	19970919
EP 931053	B1	20030416		
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, PT, IE, FI				
BR 9712108	A	19990831	BR 1997-12108	19970919
JP 2001501201	T2	20010130	JP 1998-515242	19970919
AT 237577	E	20030515	AT 1997-943873	19970919
US 6258982	B1	20010710	US 1999-254586	19990310
KR 2000048535	A	20000725	KR 1999-702447	19990322
PRIORITY APPL. INFO.: CH 1996-2323			A 19960523	19970919
OTHER SOURCE(S): CASREACT 128:257227; MARPAT 128:257227				

AB Aromatic amino compds. containing directly on the aryl ring or in a side chain
 ≥1 entities that may also undergo hydrogenation, e.g., C multiple bonds or nitrile, imino or carbonyl groups, are prepared by catalytic hydrogenation of the corresponding nitroarom. compds. in the presence of P-modified noble metal catalysts. The use of modified noble metal catalysts for hydrogenation of nitroarom. compds. is also claimed. V compds. used as cocatalysts suppress formation of hydroxylamines. Thus, 2-(2-chloro-5-aminobenzoyloxy)-2-methylpropionic acid allyl ester was prepared in 98% yield by hydrogenation of its 5-nitrobenzoyloxy-precursor in the presence of hypophosphorous acid-modified Pt/C catalyst and active C impregnated with NH₄VO₃ as cocatalyst (prepn given).
 REFERENCE COUNT: 2 THERE ARE 2 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L4 ANSWER 5 OF 20 CAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 1997:343846 CAPLUS
 DOCUMENT NUMBER: 127:65390
 TITLE: Hydrogenation of nitroaromatics by polymer-anchored bimetallic palladium-ruthenium and palladium-platinum catalysts under mild conditions
 AUTHOR(S): Yu, Zhengkun; Liao, Shijian; Xu, Yun; Yang, Bin; Yu, Daorong
 CORPORATE SOURCE: Dalian Institute of Chemical Physics, Chinese Academy of Sciences, P.O. Box 110, Dalian, 116023, Peop. Rep. China
 SOURCE: Journal of Molecular Catalysis A: Chemical (1997), 120(1-3), 247-255
 CODEN: JMCCF2; ISSN: 1381-1169
 PUBLISHER: Elsevier
 DOCUMENT TYPE: Journal
 LANGUAGE: English
 OTHER SOURCE(S): CASREACT 127:65390
 AB Polymer-anchored monometallic palladium catalyst PVP-PdCl₂ [PVP = poly(N-vinyl-2-pyrrolidone)] exhibits very high activity for the hydrogenation of p-chloronitrobenzene (CNB) to aniline (AN) in the presence of base at 65°C and atmospheric pressure. In this case, the substrate is rapidly hydrodechlorinated to nitrobenzene (NB) which is then reduced to AN. Using the polymer-anchored bimetallic palladium-ruthenium catalyst, PVP-PdCl₂-RuCl₃, and in the presence of 1.0 mol% of sodium acetate, a strong synergic effect gives rise to a remarkable increase of the selectivity for p-chloronitrobenzene (CNB) and the maximum selectivity of CNB is up to 94%. For the hydrogenation of the non-halo-substituted nitroarom. to the corresponding aromatic amines, the monometallic PVP-PdCl₂ catalyst only shows mild or poor activity, but the colloidal polymer-anchored bimetallic palladium-platinum catalyst, PVP-Pd-1/4Pt, exhibits very high activity and selectivity.
 REFERENCE COUNT: 32 THERE ARE 32 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L4 ANSWER 4 OF 20 CAPLUS COPYRIGHT 2006 ACS on STN (Continued)

L4 ANSWER 6 OF 20 CAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 1997:127373 CAPLUS
 DOCUMENT NUMBER: 126:132878
 TITLE: Process and catalyst for the manufacture of aromatic amines by gas-phase hydrogenation
 INVENTOR(S): Langer, Reinhard; Buysch, Hans-Josef; Pentling, Ursula
 PATENT ASSIGNEE(S): Bayer A.-G., Germany
 SOURCE: Eur. Pat. Appl., 8 pp.
 CODEN: EPXADW
 DOCUMENT TYPE: Patent
 LANGUAGE: German
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
EP 748789	A2	19961218	EP 1996-108855	19960603
EP 748789	A3	19980408		
EP 748789	B1	19991013		
R: BE, CH, DE, ES, FR, GB, IT, LI, NL, PT, SE				
DE 19521670	A1	19961219	DE 1995-19521670	19950614
ES 2139276	T3	20000201	ES 1996-108855	19960603
CA 2178700	AA	19961215	CA 1996-2178700	19960610
JP 09003013	A2	19970107	JP 1996-170701	19960611
PL 183134	B1	20020531	PL 1996-314750	19960612
BR 9602790	A	19980308	BR 1996-2790	19960613
CZ 287872	B6	20010214	CZ 1996-1739	19960613
CN 1142487	A	19970212	CN 1996-106185	19960614
CN 1071308	B	20010919		
PRIORITY APPL. INFO.: DE 1995-19521670			A 19950614	
OTHER SOURCE(S): MARPAT 126:132878				
AB Anilines RR1CGH3NH ₂ (R = H, Me, Et, amino; R1 = H, Me, Et) are produced by hydrogenation of nitroarom. compds. RR2CGH3NO ₂ (R1 as above; R2 = NO ₂ , H, Me, Et) with H in the gas phase using Pd on graphite or graphitized coke as catalyst support. Thus, PhNH ₂ was produced with selectivity 99.49% by passing PhNO ₂ and H (81:1 H/PhNO ₂ mol. ratio) through a tubular reactor packed with granular graphite-supported catalyst containing 2% Pd and operating under adiabatic conditions with inlet temperature 201°.				

L4 ANSWER 7 OF 20 CAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 1997:124378 CAPLUS
 DOCUMENT NUMBER: 126:132877
 TITLE: Process and catalyst for the manufacture of aromatic amines by gas-phase hydrogenation
 INVENTOR(S): Langer, Reinhard; Buysch, Hans-Josef; Pentling, Ursula
 PATENT ASSIGNER(S): Bayer A.-G., Germany
 SOURCE: Eur. Pat. Appl., 8 pp.
 CODEN: EPXKDW
 DOCUMENT TYPE: Patent
 LANGUAGE: German
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
EP 748790	A2	19961218	EP 1996-108856	19960603
EP 748790	A3	19980408		
EP 748790	B1	19991020		
R: BE, CH, DE, ES, FR, GB, IT, LI, NL, PT, SE				
DE 19521587	A1	19961219	DE 1995-19521587	19950614
ES 2139277	T3	20000201	ES 1996-108856	19960603
US 5679858	A	19971021	US 1996-660622	19960606
CA 2178701	AA	19961215	CA 1996-2178701	19960610
TW 418182	B	20010111	TW 1996-85106931	19960610
JP 09003012	A2	19970107	JP 1996-170700	19960611
PL 183111	B1	20020531	PL 1996-314749	19960612
BR 9602789	A	19960908	BR 1996-2789	19960613
CZ 287873	B6	20010214	CZ 1996-1740	19960613
CN 1143073	A	19970219	CN 1996-106186	19960614
CN 1119318	B	20030827		
US 5962365	A	19991005	US 1997-878592	19970619
PRIORITY APPLN. INFO.: DE 1995-19521587 A 19950614				
US 1996-660622 A3 19960606				

OTHER SOURCE(S): MARPAT 126:132877

AB Anilines R₁CH₂NH₂ (R = H, Me, Et, aryl; R₁ = H, Me, Et) are produced by hydrogenation of nitroarom. compds. R₁CH₂CHNO₂ (R₂ = NO₂, H, Me, Et; R₁ as above) with H in the gas phase using Pd and Pb on graphite or graphitized coke as catalyst support. Thus, PhNH₂ was produced with selectivity >99.8% by passing H/PhNO₂ mixture (80:1 H/PhNO₂ mol. ratio) through a tubular reactor packed with granular graphite-supported catalyst containing 2% Pd and 0.5% Pb and operating under adiabatic conditions with inlet temperature 202°.

L4 ANSWER 8 OF 20 CAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 1996:723561 CAPLUS
 DOCUMENT NUMBER: 126:46896
 TITLE: Bimetallic synergistic effect of polymer-supported catalysts in the hydrogenation of nitroaromatics
 AUTHOR(S): Yang, Bin; Xu, Yun; Liao, Shijian; Yu, Daorong
 CORPORATE SOURCE: Dalian Institute of Chemical Physics, The Chinese Academy of Sciences, Dalian, 116023, Peop. Rep. China
 SOURCE: Fenzi Cuihua (1996), 10(5), 339-344
 CODEN: FECHUH; ISSN: 1001-3555
 PUBLISHER: Zhongguo Kexueyuan Lanzhou Xuehui Wuli Yanjiusuo
 DOCUMENT TYPE: Journal
 LANGUAGE: Chinese

AB The catalytic behaviors of poly-N-vinyl-2-pyrrolidone (PVP)-supported palladium monometallic catalyst Pd/PVP and palladium-based bimetallic catalysts (1-m)Pd-m/PVP in the hydrogenation of nitroarom. were studied. The catalyst Pd/PVP shows high catalytic activity and selectivity for the formation of aromatic amines in the hydrogenation of nitrobenzene, m-dinitrobenzene etc., but the catalyst shows low activity even no reactivity for other arom., for example, the hydrogenation of p-nitrobenzoic acid. Among the second metal compds. added, hexachlorophosphoric acid is the best one. The effects of the preparative methods, the molar ratio of palladium to platinum, the solvent used and the amount of base on the hydrogenation of nitrobenzene catalyzed by the palladium-platinum bimetallic catalysts were investigated. Catalyst 0.80 Pd-0.20 Pt/PVP exhibits the highest catalytic activity in the hydrogenation of nitrobenzene among a series of bimetallic catalyst prepared in alc.-water solution with alternative molar ratios of Pd to Pt. These two metals exhibit obvious synergic effect and the TOFmax of the catalyst can amount to 190 min⁻¹. The catalyst also show high catalytic activity and selectivity for the formation of amines in the hydrogenation of other nitroarom. .. e.g. the TOFmax can be up to 216 min⁻¹ in the hydrogenation of m-nitrobenzoic acid.

L4 ANSWER 9 OF 20 CAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 1996:300154 CAPLUS
 DOCUMENT NUMBER: 125:85985
 TITLE: Hydrogenation and hydroamination on palladium compounds immobilized in polymeric matrices
 INVENTOR(S): Klyuev, M. V.; Nasibulin, A. A.
 CORPORATE SOURCE: Ivanovo State Univ., Ivanovo, 153025, Russia
 SOURCE: Kinetics and Catalysis (Translation of Kinetika i Kataliz) (1996), 37(2), 215-228
 CODEN: KICAA8; ISSN: 0023-1584
 PUBLISHER: MAIK Nauka/Interperiodica
 DOCUMENT TYPE: Journal
 LANGUAGE: English

AB Small (Pd5-7) clusters strongly immobilized by polymeric matrices are obtained during reduction of palladium-containing anionites by mol. hydrogen or sodium borohydride. The catalytic properties of the systems obtained are examined both in the hydrogenation reactions of unsatd. compds. (primarily of the nitroarom. series) and in the hydrogenation amination of aldehydes by amines or nitro compds. under mild conditions (1 atm of H₂, 20-50°C, organic solvents). Palladium-containing anionites proved to be more selective and stable than Pd/C, especially in the case of complex substrates. The yield

of the desired amine reached 98-99%. The effect of a polymeric matrix on the rates and, in some cases, on the routes of catalytic reactions is revealed and discussed. The kinetics of hydrogenation and hydroamination on palladium-containing anionites is investigated, and their mechanisms are proposed.

L4 ANSWER 10 OF 20 CAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 1996:262060 CAPLUS
 DOCUMENT NUMBER: 124:289003
 TITLE: Selective preparation of fluorinated aromatic amines with exceptionally low content of defluorinated material.
 INVENTOR(S): Kiel, Wolfgang; Paetz, Klaus-Christian; Mueller, Nikolaus; Kissener, Wolfram
 PATENT ASSIGNER(S): Bayer A.-G., Germany
 SOURCE: Ger. Offen., 7 pp.
 CODEN: GWXXEX
 DOCUMENT TYPE: Patent
 LANGUAGE: German
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
DE 4428535	A1	19960215	DE 1994-4428535	19940812
EP 700895	A2	19960313	EP 1995-112060	19950801
EP 700895	A3	19960626		
R: DE, FR, GB, IT				
JP 08059572	A2	19960305	JP 1995-219465	19950807
PRIORITY APPLN. INFO.: DE 1994-4428535 A 19940812				

OTHER SOURCE(S): CASREACT 124:289003; MARPAT 124:289003
 AB Fluorinated aromatic nitro compds. were hydrogenated in the liquid phase in the presence of catalysts selected from Ni, Co, and noble metals and their compds. and R₁SO_nR₂ [R₁, R₂ = H, alkyl, hydroxyalkyl, carboxyalkyl, Ph, alkylcarbonyl; R₁R₂ = CH₂CHCH₂CH₂, (CH₂)₄, (CH₂)₅, CH₂CH₂CH₂CH₂CH₂; X = O, S; n = 0, 1]. Thus, 5-fluoro-2-nitrobenzoic acid was hydrogenated in aqueous NaOH (pH 10) in an autoclave at 50-60° and 80 bar H in the presence of Pt/C and 0.6% bis(2-hydroxyethyl) sulfide to give >99% pure 5-fluorocanthranilic acid product containing 0.002% defluorinated material.

L4 ANSWER 11 OF 20 CAPLUS COPYRIGHT 2006 ACS on STN
 ACCESSION NUMBER: 1989:616279 CAPLUS
 DOCUMENT NUMBER: 111:216279
 TITLE: Studies on hydrogenation with nickel catalysts. VI. Catalytic properties of colloidal nickel for hydrogenation. Catalytic hydrogenation of nitro and halogen compounds
 AUTHOR(S): Sakai, Mutsuji; Yasui, Toshikazu; Fujimoto, Shinpei; Tomita, Masahiro; Sakakibara, Yasumasa; Uchino, Norito
 CORPORATE SOURCE: Dep. Polym. Sci. Eng., Kyoto Inst. Technol., Kyoto, 606, Japan
 SOURCE: Nippon Kagaku Kaishi (1989), (9), 1642-4
 CODEN: NKAB88; ISSN: 0369-4577
 DOCUMENT TYPE: Journal
 LANGUAGE: Japanese
 AB Colloidal Ni was easily prepared by reaction of NiBr₂ with Zn powder. It was an active catalyst for hydrogenation of aromatic nitro compds. and of halobenzenes. Aromatic nitro compds. were hydrogenated to give the corresponding amines in high yields in the presence of the colloidal Ni under 1 atm H₂. p-Bromonitrobenzene was hydrogenated successively to afford aniline via p-bromoaniline. p-Bromoaniline and p-chloroaniline were reduced to aniline in good yields. It was suggested that the amino moiety assisted the adsorption of the substrate on the surface of the metal and that it acted as an acceptor of hydrogen halide. The hydrogenation of halobenzenes gave benzene in the presence of aniline. The reactivity of halobenzenes was in the order; I>Br>Cl.

L4 ANSWER 12 OF 20 CAPLUS COPYRIGHT 2006 ACS on STN
 ACCESSION NUMBER: 1988:40035 CAPLUS
 DOCUMENT NUMBER: 108:40035
 TITLE: Selective catalytic hydrogenation of nitrobenzene to hydrazobenzene
 AUTHOR(S): Karwa, Shrikant L.; Rajadhyaksha, Rajeev A.
 CORPORATE SOURCE: Dep. Chem. Technol., Univ. Bombay, Bombay, 400 019, India
 SOURCE: Industrial & Engineering Chemistry Research (1988), 27(11), 21-4
 CODEN: IECRED; ISSN: 0888-5885
 DOCUMENT TYPE: Journal
 LANGUAGE: English
 AB Pt-C significantly more selective catalyst than Pd-C for conversion of PhNO₂ to PhNHNHPh. Addition of DMSO improved the selectivity, although the rates of various reactions were considerably reduced. The hydrogenation of a few substituted nitroaroms. was also investigated. The presence of electron-releasing substituents reduced the selectivity to hydrazobenzene. Complete hydrogenation to aromatic amines was the only side reaction.

L4 ANSWER 13 OF 20 CAPLUS COPYRIGHT 2006 ACS on STN
 ACCESSION NUMBER: 1987:409320 CAPLUS
 DOCUMENT NUMBER: 107:9320
 TITLE: Catalytic reduction process for the production of aromatic amino compounds
 INVENTOR(S): Twigg, Martyn Vincent
 PATENT ASSIGNEE(S): Imperial Chemical Industries PLC, UK
 SOURCE: Eur. Pat. Appl., 13 pp.
 CODEN: EFXKDW
 DOCUMENT TYPE: Patent
 LANGUAGE: English
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
EP 211545	A2	19870225	EP 1986-305465	19860716
EP 211545	A3	19870429		
EP 211545	B1	19900418		
R: AT, BE, CH, DE, FR, GB, IT, LI, LU, NL, SE				
AT 52077	E	19900515	AT 1986-305465	19860716
US 4777295	A	19881011	US 1986-887569	19860721
CA 1259632	A1	19890919	CA 1986-514598	19860724
DK 8603646	A	19870202	DK 1986-3646	19860731
JP 62053945	A2	19870309	JP 1986-181815	19860801
PRIORITY APPLN. INFO.:				
AB Aromatic nitro compds. are reduced to the corresponding amines with H in the presence of a catalyst containing Co and/or Ni and ≥1 difficultly reducible metal oxide with decreased phenylcyclohexylamine (I) byproduct formation. The Co and/or Ni comprise 80-98% of the total number of				
atoms in the catalyst excluding O and C. A catalyst, consisting of 93.1:3.7:3.1:0.1 (weight ratio) NiO-Al ₂ O ₃ -CoO ₂ -Na ₂ O (prepared by precipitation of the				
metal nitrates with Na ₂ CO ₃ followed by calcination at 350° for 4 h and ignition at 900°), was reduced at 450° and used for reduction of PhNO ₂ , resulting in 3.9 g/h PhNH ₂ /g catalyst and <0.1 g/h I/g catalyst, compared with 4.4 and ≥1.9 for a standard (probably Ni/kieselguhr) catalyst.				

L4 ANSWER 14 OF 20 CAPLUS COPYRIGHT 2006 ACS on STN
 ACCESSION NUMBER: 1987:52099 CAPLUS
 DOCUMENT NUMBER: 106:52099
 TITLE: Reactor for continuous production of aromatic amines
 INVENTOR(S): Zimmermann, Reiner; Kinza, Horst; Alscher, Gerhard
 PATENT ASSIGNEE(S): Akademie der Wissenschaften der DDR, Ger. Dem. Rep.
 SOURCE: Ger. (East), 6 pp.
 CODEN: GEXKAS
 DOCUMENT TYPE: Patent
 LANGUAGE: German
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
DD 229940	A1	19851120	DD 1984-271257	19841220
PRIORITY APPLN. INFO.:				
AB A reactor for the continuous preparation of aromatic amines by liquid-phase catalytic hydrogenation of nitroarom. compds. has a combination of loop and tubular characteristics, whereby the catalyst bed has ≥1 electrode on the nitroarom. feed side allowing the regulation of the feed rate, thus avoiding damage to the catalyst and increasing its lifetime. The reactor is operated at pressures ≤3 MPa. Thus, 300 g/h of a 10% 2-O ₂ N-C ₆ H ₄ NH ₂ solution was hydrogenated at 70°/0.1 MPa over 700 g SiO ₂ -supported Ni catalyst at linear H feed rate 1 cm/s, yielding a o-C ₆ H ₄ (NH ₂) ₂ product concentration of 8%, at a control potential of +100 mV.				

L4 ANSWER 15 OF 20 CAPLUS COPYRIGHT 2006 ACS on STN
 ACCESSION NUMBER: 1989:408324 CAPLUS
 DOCUMENT NUMBER: 105:8324
 TITLE: Catalytic hydrogenation in the liquid phase
 INVENTOR(S): Wolter, Gerhard; Grahn, Eberhard; Kaerst, Helmut;
 Lucke, Siegfried; Mechel, Kurt; Wilhelm, Ottmar;
 Zoelch, Lothar
 PATENT ASSIGNEE(S): VEB Chemiekombinat Bitterfeld, Ger. Dem. Rep.
 SOURCE: Ger. (East), 15 pp.
 CODEN: GEXKAS
 DOCUMENT TYPE: Patent
 LANGUAGE: German
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
DD 226872	A1	19850904	DD 1984-265720	19840727
DD 1984-265720			DD 1984-265720	19840727

PRIORITY APPL. INFO.:
 AB Continuous catalytic liquid-phase hydrogenation, especially strongly exothermic, (e.g. hydrogenation of nitroarom. compds. to amines), is carried out quasi-kinetically in tube reactors with heating and cooling mantles in which the 3-phase reactants (gas-solid-liquid) are mixed by pulsation at frequency <30,000/min (preferably 30-3000/min) with variable amplitude. Addnl. static mixing elements can be placed along all or part of the length of the reactor. Thus, 4-nitrotoluene was hydrogenated at 100°/3 MPa, and frequency (at 5 mm amplitude) 300/min in MeOH over a supported Ni catalyst in a 1-L tube reactor to give 96% 4-toluidine.

L4 ANSWER 16 OF 20 CAPLUS COPYRIGHT 2006 ACS on STN
 ACCESSION NUMBER: 1981:3461 CAPLUS
 DOCUMENT NUMBER: 94:3461
 TITLE: Noble metal catalysis in industrial hydrogenations.
 Part I. Palladium solubility and hydrogen availability
 AUTHOR(S): Bird, A. J.; Thompson, D. T.
 CORPORATE SOURCE: Res. Cent., Johnson Matthey and Co., Ltd., Reading, RG4 9NH, UK
 SOURCE: Catalysis in Organic Syntheses (1980), Volume Date 1978, 7th, 61-106
 CODEN: CAOSDF; ISSN: 0197-534X
 DOCUMENT TYPE: Journal
 LANGUAGE: English
 AB Solubility of Pd from heterogeneous catalysts during hydrogenation is a problem, particularly when nitro-aroms. are reduced to aromatic amines. Aqueous NH₃-NH₄Cl with Pd/C catalysts was chosen as a model system. Pd was leached from the support with both reduced (metallic Pd) and unreduced (PdO) catalysts. The Pd becomes insol. if it is converted to PdH₂ with either gaseous H₂ or a compound which decomps. on the catalyst to given H. Pd is made insol. if the metal is maintained as a hydride during the catalytic reaction. This can only occur if the rate of H arrival at the metal surface is greater than the rate of consumption, i.e. the reaction is controlled by surface kinetics and not by a parameter of mass transport. This conclusion was tested by examining the effect of mass transport on Pd solubility during the hydrogenation of 2,4-(O₂N)₂C₆H₃Me over Pd/C.

L4 ANSWER 17 OF 20 CAPLUS COPYRIGHT 2006 ACS on STN
 ACCESSION NUMBER: 1974:535689 CAPLUS
 DOCUMENT NUMBER: 81:135689
 TITLE: Homogeneous catalysts useful in the reduction of nitroaromatics to amines
 INVENTOR(S): Knifton, John F.; Suggitt, Robert M.
 PATENT ASSIGNEE(S): Texaco Inc.
 SOURCE: U.S., 10 pp.
 CODEN: USXXAM
 DOCUMENT TYPE: Patent
 LANGUAGE: English
 FAMILY ACC. NUM. COUNT: 4
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 3832401	A	19740827	US 1971-121132	19710304
GB 1340458	A	19731212	GB 1972-8738	19720225
CA 1004688	A1	19770201	CA 1972-135747	19720228
BE 780150	A1	19720904	BE 1972-114632	19720302
NL 7202741	A	19720906	NL 1972-2741	19720302
FR 2127970	A5	19721013	FR 1972-7426	19720303
IT 949857	A	19730611	IT 1972-21379	19720303
BR 7201259	A	19751230	BR 1972-1259	19720303
DE 2210564	A	19720914	DE 1972-2210564	19720304
US 3903167	A	19750902	US 1974-462912	19740422
US 3906045	A	19750916	US 1974-462833	19740422
			US 1971-121132	A 19710304
			US 1971-193204	A 19711027

PRIORITY APPL. INFO.:
 AB Nitroaromatics, e.g., PhNO₂, p- or o-O₂NC₆H₄Me, 2,6-, 2,5-, 2,4-, 3,5- or 3,4-Me₂C₆H₃NO₂, p-O₂NC₆H₄NH₂, p-ClC₆H₄NO₂, and p-O₂NC₆H₄-COMe, were hydrogenated with at least 50% conversion and 80% amine selectivity over homogeneous Ru or Fe catalyst complexes, e.g., RuCl₂(PPh₃)₃, Fe(CO)₅(PPh₃)₂, Fe(CO)₃(AsPh₃)₂, Fe(CO)₅, RuCl₂(AsPh₃)₃ and RuCl₂(AsEt₃)₃. Seventy-one examples were given.

L4 ANSWER 18 OF 20 CAPLUS COPYRIGHT 2006 ACS on STN
 ACCESSION NUMBER: 1972:24811 CAPLUS
 DOCUMENT NUMBER: 76:24811
 TITLE: Aniline production by dual function catalysis
 AUTHOR(S): Polinski, Leon M.; Harvey, Ernest A.
 CORPORATE SOURCE: Am. Cyanamid, Bound Brook, NJ, USA
 SOURCE: Industrial & Engineering Chemistry Product Research and Development (1971), 10(4), 365-9
 CODEN: IEPRAG; ISSN: 0196-4321
 DOCUMENT TYPE: Journal
 LANGUAGE: English
 AB Polyfunctional heterogeneous catalysis is responsible for petroleum reforming of hydrocarbons, and the theory elucidated and developed by Weisz for these reactions is well established. These same concepts are used to devise a polyfunctional catalyst system for simultaneously steam reforming and hydrogenating nitroaromatic compds. (e.g., nitrobenzene) to aromatic amines (e.g., aniline) in a fixed bed vapor phase catalytic system. This avoids the large exotherms present in a straight hydrogenation (the exotherm is still present but offset by the endotherm of the reforming reaction) and allows two heretofore sep. consecutive catalytic reaction processes to occur simultaneously in a single unit despite unfavorable equilibrium conditions for the steam reforming reaction. The complexities of the kinetics are examined

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L4 ANSWER 19 OF 20 CAPLUS COPYRIGHT 2006 ACS on STN
 ACCESSION NUMBER: 1968:95486 CAPLUS
 DOCUMENT NUMBER: 68:95486
 TITLE: Preparation of aromatic amines by the catalytic hydrogenation of aromatic nitro compounds
 INVENTOR(S): Dovell, Frederick S.; Greenfield, Harold
 PATENT ASSIGNEE(S): Uniroyal, Inc.
 SOURCE: U.S., 4 pp.
 CODEN: USXXAM
 DOCUMENT TYPE: Patent
 LANGUAGE: English
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 3350450		19671031	US 1964-364280	19630812

GI For diagram(s), see printed CA issue.
 AB The process comprises: (a) reductive hydrogenation of a chloro-substituted aromatic nitro compound; (b) reductive alkylation of the primary amine obtained in (a) with H and a lower alkyl or aryl aldehyde, lower aliphatic or alkyl aryl ketone to obtain the corresponding chloro-substituted amine. Steps (a) and (b) were carried out in the presence of a sulfide of Pb, Pt, Rh, or Co. Thus, 10 g. p-BrC₆H₄NO₂, 240 ml. MeOH, and 1.4 g. PtS₂-C (5%) were charged to a Magne-Dash autoclave, which was sealed, purged first with N₂, then with H₂, heated 1 hr. with agitation at 100-30°/500-800 psig. H₂ and then 6.5 hrs. at 130°. At this point the absorption of H stopped abruptly at approx. 99% of the theoretical amount required for reduction. The reaction mixture was filtered, the filtrate made alkaline with NaOH, concentrated, treated with C₆H₆, and the remaining MeOH removed by distillation to a liquid (pot) temperature of 205°/atmospheric pressure to leave 99.5% p-BrC₆H₄NH₂, m. 58.5-61.5°. A mixture m.p. with an authentic sample gave no depression; neither PhNH₂ nor any nitro compound was detected by gas-liquid chromatog. in either the distillate or the residue. p-ClC₆H₄NO₂ (31.5 g.), 158 g. Me₂CO, and 2.5 g. Rh-C 5% under 50 psig. H₂S and 1300 psig. H₂ were heated 4.4 hrs. with agitation at 180°/1200-1400 psig., and the mixture worked up to give 100% p-ClC₆H₄NH₂-iso (1), b₅ 100°, m. 8-9°, n_D 1.5470; HCl salt m. 159.5-60.5° (C₆H₆). Similarly obtained over PtS₂ in 99.5% yield was 2,5-Cl₂C₆H₃NH₂, m. 48-9.5°. Results obtained from the reduction of halobenzenes over the above catalysts are given. It is useful as a post-emergence herbicide to kill narrow-leaf grasses in an area containing broad-leaf flora and narrow-leaf grasses.

L4 ANSWER 20 OF 20 CAPLUS COPYRIGHT 2006 ACS on STN
 ACCESSION NUMBER: 1946:31222 CAPLUS
 DOCUMENT NUMBER: 46:31222
 ORIGINAL REFERENCE NO.: 40:6098b-d
 TITLE: Reduction of aromatic nitro compounds
 INVENTOR(S): Mason, Ralph B.
 PATENT ASSIGNEE(S): Standard Oil Development Co.
 DOCUMENT TYPE: Patent
 LANGUAGE: Unavailable
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 2402423		19460618	US 1943-508066	19431028

AB A continuous 2-stage process for the catalytic reduction of aromatic nitro compds. to the corresponding amines is described. In the 1st stage, a com. nitroaromatic (containing polynitro compds.) is hydrogenated under mild temperature conditions (below about 300°F.) to reduce the polynitro compds., and in the 2nd stage, higher temps. (up to 550 °F.) are used to complete the hydrogenation. The temperature should be low enough to prevent reduction of the aromatic nucleus. Mol. sulfide supported on charcoal is a satisfactory catalyst for reduction of the nitroxylenes. The process, described in detail (one diagram), is said to give over 99% conversion of nitro compds. to the corresponding amines with a maximum of safety and control. The mylidines improve the performance of aviation gasoline.

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LOGOFF? (Y)/N/HOLD:Y

COST IN U.S. DOLLARS

SINCE FILE

TOTAL

ENTRY

SESSION

FULL ESTIMATED COST

73.16

73.81

DISCOUNT AMOUNTS (FOR QUALIFYING ACCOUNTS)

SINCE FILE

TOTAL

ENTRY

SESSION

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-15.00

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